



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

April 20, 2011

Ms. Melissa Hadley
Morton Salt International, Inc.
13000 West Glendale Ave.
Glendale, AZ 85307-2408

Re: Underground Injection Control (UIC) Permit #AZS 000 000 005
RB #4, Glendale, Arizona
Minor Permit Modification

Dear Ms. Hadley:

Enclosed is a Minor Modification to Permit No. AZS 000 000 005 issued to Morton Salt Company for operation of RB #4. This minor permit modification is issued in accordance with UIC regulations at 40 CFR §144.41. The permit modification is effective immediately.

If you have any questions regarding the permit conditions, please call Michele Dermer at (415) 972-3417.

Sincerely,

A handwritten signature in blue ink, appearing to read "D. Albright".

David Albright,
Manager, Ground Water Office

Enclosure: Minor Modification

cc: Mason Bolitho, ADEQ

MINOR MODIFICATION TO PERMIT NO. AZS000000005 ROACH-BAKER #4

In accordance with 40 CFR §144.41, it is understood and agreed that this permit has been modified to revise the name of the Permittee, and to incorporate additional permit requirements. Modifications are as follows:

Page/Permit Condition

Throughout entire permit: “Morton International, Inc., Morton Salt Division” shall be replaced with “Morton Salt, Inc.”

Page/Permit Condition

Page 12 – A. CONSTRUCTION: 1. Casing and Cementing – add new requirement as follows:

- a. A casing inspection log (CIL) to the final depth should be completed by no later than the end of 2011 to determine the current condition of the 10^{3/4}" production casing. Subsequent CILs will be conducted as outlined below (see Attachment S for Casing Inspection Log Guidance), or when otherwise requested by EPA:
 - i. If metal loss of nominal casing thickness is greater than 70%, Permittee shall repair the casing or plug and abandon the well. After the casing is repaired, Permittee shall verify the integrity of the casing by conducting a Water Brine Interface Test (WBIT) or equivalent, and an additional CIL subject to EPA approval prior to recommencing injection in the repaired well. The required WBIT procedure shall be submitted to EPA for approval prior to the conduct of the test.
 - ii. If metal loss of nominal casing thickness is between 40 and 70%, Permittee shall conduct a WBIT as described in the previous paragraph and shall monitor casing loss by conducting additional CILs every three (3) years.
 - iii. If the metal loss of nominal casing thickness is between twenty (20) and forty (40) percent (%), Permittee shall monitor casing loss by conducting additional CILs every five (5) years.
 - iv. If the metal loss of nominal casing thickness is twenty (20) percent (%) or less, Permittee may continue normal injection operations. Permittee shall conduct a follow-up CIL in ten (10) years.

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Page 13 – B. OPERATIONS: 4. Additional Injection Limitation: add new requirement as follows:

In well RB #4, mineral oil is being used as a blanket to control the shape and height of the cavern. Any proposed modification of the use of this blanket fluid must be submitted to EPA for approval. Upon well closure, blanket fluid is to be removed, to the extent possible, pursuant to the P&A plan (Attachment Q). Any additional proposed modification of the injection fluid (fresh water only) must be analyzed and submitted to EPA for approval prior to injection. The Permittee shall submit, each year, a certified statement attesting to compliance with this requirement.

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Page 14, 15– C. MONITORING: 2. Injection fluid analysis: add the following new requirement:

Injection fluids shall be analyzed to yield representative data on their physical, chemical, or other relevant characteristics. The Permittee shall take samples at or before the wellhead for analysis. Test results shall be submitted to EPA on an annual basis.

Samples and measurements shall be representative of the monitored activity. The Permittee shall utilize applicable analytical methods described in Table I of 40 CFR §136.3 or in EPA Publication SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," unless other methods have been approved by EPA.

Summary of acceptable analytic Methods:

Inorganic Constituents – appropriate USEPA methods for Major Anions and Cations (including an anion/cation balance).

Solids – Standard Methods 2540C and 2540D for Total Dissolved Solids and Total Suspended Solids.

General and Physical Parameters – appropriate USEPA methods for Temperature, Turbidity, pH, Conductivity, Hardness, Specific Gravity, Alkalinity, and Biological Oxygen Demand ("BOD"); and Density and Viscosity (See EPA Bulletin 712-C-96-032) under standard conditions.

Trace Metals – USEPA Method 200.8.

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Page 16 – C. MONITORING: 6. Continuous Monitoring Devices - add new requirement as follows:

Temperature and injection pressure shall be measured at the wellhead using equipment of sufficient precision and accuracy. All measurements must be recorded at minimum to a resolution of one tenth of the unit of measure, except temperature (e.g. injection and production rates and volumes must be recorded to a resolution of a tenth of a gallon; pressure must be recorded to a resolution of a tenth of a psig; injection fluid temperature must be recorded to a resolution of one degree Fahrenheit). Exact dates and times of measurements, when taken, must be recorded and submitted. Injection and production rates shall be measured at or near the wellhead. The Permittee shall continuously monitor and record the following parameters at the prescribed frequency:

Monitoring Parameter	Frequency	Instrument
Injection rate (gallons per minute)	continuous	digital recorder
Injection volume (gallons)	continuous	digital totalizer
Total Cumulative Injection Volume (gallons)	daily	digital totalizer
Injection pressure (psig)	continuous	digital recorder
Injection fluid temperature (degrees Fahrenheit)	daily	digital recorder
Produced fluid volume (gallons)	continuous	digital recorder
Produced fluid temperature (degrees Fahrenheit)	daily	digital recorder

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Page 16 – C. MONITORING, add new requirement as follows:

Ratio of Injected Volume to Produced Volume Limitation

If over a calendar month period (as determined by a review of the monthly ratio during the last five days of the calendar month) the average ratio of injected to produced brine falls outside the range of 0.95 to 1.1, a written explanation shall be included in the quarterly report. If over a calendar month period the ratio of injected to produced brine averages higher than 1.15, the Permittee must report this condition to EPA within 24 hours, and immediately cease injection into RB #4. In this circumstance, the Permittee shall conduct an investigation to determine the cause of this abnormal ratio. The Permittee shall submit to EPA a report of the investigation within 15 days of cessation of injection into the well.

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Page 16 – D. REPORTING REQUIREMENTS, add new requirements as follows:

- (d) To be included in the quarterly report due in January each year, the following additional information: Annual reporting summary (EPA Form 7520-11).
- (e) A narrative description of any non-compliance, including an explanation of any injection to production ratio abnormalities, (as described above), as well as any other non-compliance that occurred during the reporting period.

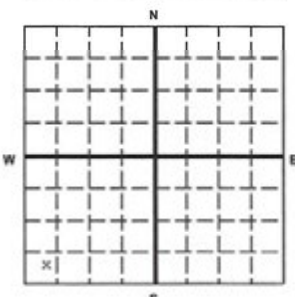
Page/Permit Condition

ATTACHMENT Q – Plugging and Abandonment Plan: the plan included in the permit is deleted in its entirety, and replaced with the following new plan.

OMB No. 2046-0042 Approval Expires 12/31/2011

United States Environmental Protection Agency
Washington, DC 20460

PLUGGING AND ABANDONMENT PLAN

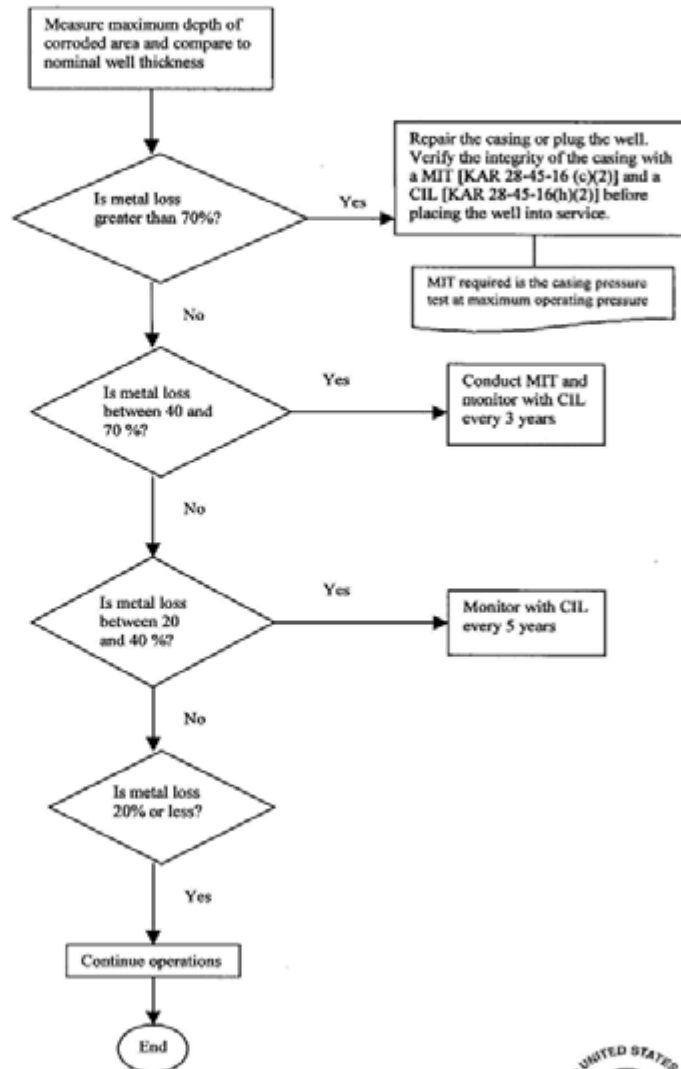
Name and Address of Facility Morton Salt, Inc. 13000 West Glendale Avenue, Glendale, Arizona 85307-2408		Name and Address of Owner/Operator Same.																					
Locate Well and Outline Unit on Section Plat - 640 Acres 	State Arizona	County Maricopa	Permit Number AZ000000005																				
	Surface Location Description 1/4 of SW 1/4 of SW 1/4 of SW 1/4 of Section 2 Township 2N Range 1W																						
Locate well in two directions from nearest lines of quarter section and drilling unit Surface Location ___ ft. from (N/S) ___ Line of quarter section and ___ ft. from (E/W) ___ Line of quarter section.																							
TYPE OF AUTHORIZATION <input checked="" type="checkbox"/> Individual Permit <input type="checkbox"/> Area Permit <input type="checkbox"/> Rule Number of Wells 1 Lease Name Morton Salt		WELL ACTIVITY <input type="checkbox"/> CLASS I <input type="checkbox"/> CLASS II <input type="checkbox"/> Brine Disposal <input type="checkbox"/> Enhanced Recovery <input type="checkbox"/> Hydrocarbon Storage <input checked="" type="checkbox"/> CLASS III Well Number Roach-Baker #4																					
CASING AND TUBING RECORD AFTER PLUGGING <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>SIZE</th> <th>WT (LB/FT)</th> <th>TO BE PUT IN WELL (FT)</th> <th>TO BE LEFT IN WELL (FT)</th> <th>HOLE SIZE</th> </tr> </thead> <tbody> <tr> <td>13 3/8</td> <td>54.5</td> <td></td> <td>1795</td> <td>cmt.</td> </tr> <tr> <td>10 3/4</td> <td>40.5</td> <td></td> <td>2100</td> <td>cmt.</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		SIZE	WT (LB/FT)	TO BE PUT IN WELL (FT)	TO BE LEFT IN WELL (FT)	HOLE SIZE	13 3/8	54.5		1795	cmt.	10 3/4	40.5		2100	cmt.						METHOD OF EMPLACEMENT OF CEMENT PLUGS <input checked="" type="checkbox"/> The Balance Method <input type="checkbox"/> The Dump Bailer Method <input type="checkbox"/> The Two-Plug Method <input type="checkbox"/> Other	
SIZE	WT (LB/FT)	TO BE PUT IN WELL (FT)	TO BE LEFT IN WELL (FT)	HOLE SIZE																			
13 3/8	54.5		1795	cmt.																			
10 3/4	40.5		2100	cmt.																			
CEMENTING TO PLUG AND ABANDON DATA: Size of Hole or Pipe in which Plug Will Be Placed (inches) Depth to Bottom of Tubing or Drill Pipe (ft) Sacks of Cement To Be Used (each plug) Slurry Volume To Be Pumped (cu. ft.) Calculated Top of Plug (ft.) Measured Top of Plug (if tagged ft.) Slurry WL (Lb./Gal.) Type Cement or Other Material (Class III)		PLUG #1 10.050" 225 270 1000 1.18 Class III	PLUG #2 10.050" 450 340 surface 1.18 Class III	PLUG #3 	PLUG #4 	PLUG #5 	PLUG #6 	PLUG #7 															
LIST ALL OPEN HOLE AND/OR PERFORATED INTERVALS AND INTERVALS WHERE CASING WILL BE VARIED (if any) <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>From</th> <th>To</th> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>								From	To	From	To												
From	To	From	To																				
Estimated Cost to Plug Wells \$78,470 See the attached cost estimate																							
Certification I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)																							
Name and Official Title (Please type or print) Melissa Hadley, Facility Manager		Signature <i>Melissa Hadley</i>		Date Signed 1/10/11																			

EPA Form 7520-14 (Rev. 12-08)

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Attachment S – the permit is modified to include the following new guidance regarding casing inspection logs:

**EPA Region 9
Guidance for Casing Inspection Log Results
UIC Underground Injection Wells**



All other permit conditions remain unchanged.

This minor modification to become effective on

Alexis Strauss, Director
Water Division